

AMENDMENTS TO THE CLAIMS

Please amend Claims 1, 14, 18, and 19 and cancel Claim 17 of the Application as follows, without prejudice or disclaimer to continued examination on the merits:

1. (Currently Amended): A method for creating a permanent sub-network connection in a network of connected nodes, the method comprising:

discovering neighbors of each node in the network of connected nodes and link status with a signaling and routing protocol;

distributing routing topology information and optimal route determination with the signaling and routing protocol;

defining a route including a working path for a permanent sub-network connection in the network of nodes from an ingress node to an egress node, wherein the route is defined explicitly, automatically through the signaling and routing protocol, and in combinations thereof ~~wherein the network of nodes are arranged in a mesh structure in which each node is connected to one or more other nodes;~~

defining a time out period to be associated with the permanent sub-network connection and initiated in response to the detection of a failure in the permanent sub-network connection, the time out period defining a time over which the failure in the permanent sub-network connection is permitted to be corrected prior to a tear down of the permanent sub-network connection;

provisioning the route;

distributing a route description to each node along the route from the ingress node to the egress node; and

configuring each node along the route in accordance with the route description to provide data traffic services from the ingress node to the egress node;

wherein the permanent sub-network connection comprises a permanent grouping of one or more ~~SONET/SDH~~ paths that pass through a node in the network which is set up and torn down with [a] the signaling and routing protocol.

2. (Original): The method of claim 1 wherein the step of defining the route includes receiving an explicit route definition from a user defining the working path.
3. (Original): The method of claim 1 wherein the step of defining the route includes dynamically determining a working path including signaling nodes in the network to determine an optimal route between the ingress node and the egress node.
4. (Original): The method of claim 1 wherein the step of provisioning the route includes creating a DTL to describe the route.
5. (Original): The method of claim 4 wherein the step of distributing the route includes distributing the DTL to all other nodes along the route.
6. (Original): The method of claim 1 wherein the step of provisioning the route includes determining if a proposed route satisfies network constraints.
7. (Original): The method of claim 1 wherein the step of provisioning the route includes determining if resources are available in each node in a proposed route.
8. (Original): The method of claim 7 wherein the step of determining if resources are available includes signaling each node in the proposed route to determine if resources are available in each respective node.
9. (Original): The method of claim 1 wherein the step of defining a time out period includes determining an amount of time to wait prior to clearing resources for the route after a failure has been detected along the route.
10. (Original): The method of claim 1 wherein the step of provisioning the route includes determining if a proposed route satisfies predetermined node requirements for each node in the proposed route.

11. (Original): The method of claim 10 wherein the predetermined node requirements include quality of service requirements for a given node.
12. (Previously Presented): The method of claim 1 further comprising:
determining if the route can be provisioned, and if not, automatically calculating a working path that satisfies network and node requirements.
13. (Previously Presented): The method of claim 12 further comprising:
determining if no route can be defined that satisfies the network and node requirement,
and
not provisioning the route.
14. (Currently Amended): A method for deallocating resources in a permanent sub-network connection, the permanent sub-network connection defining a connection between an ingress node and an egress node in a network of connected nodes, the method comprising:
discovering neighbors of each node in the network of connected nodes and link status with a signaling and routing protocol;
distributing routing topology information and optimal route determination with the signaling and routing protocol;
detecting a failure in a path included in the permanent sub-network connection between an ingress and egress node;
storing route information associated with the permanent sub-network connection prior to tear down such that at a time for restoring the permanent sub-network connection, no optimal routing determination is required, wherein the route information is received from the signaling and routing protocol;
initiating a predetermined time out period in response to detection of the failure;
determining if the predetermined time out period has expired since detection of the failure;
if the time out period has expired, determining if the failure has been corrected; and
if the failure has not been corrected, deallocating resources associated with the permanent sub network connection;

~~wherein the network of connected nodes are arranged in a mesh structure in which each node is connected to one or more other nodes; and~~

wherein the permanent sub-network connection comprises a permanent grouping of one or more SONET/SDH paths that pass through a node in the network which is set up and torn down with [a] the signaling and routing protocol.

15. (Previously Presented): The method of claim 14 wherein the step of determining if a predetermined time out period has expired includes retrieving a time out period value associated with the failed permanent sub-network connection and initiating a timer with the time out period value.

16. (Original): The method of claim 14 wherein the step of deallocating resources includes signaling, by one or more nodes in a path forming the permanent sub-network connection between the ingress and egress nodes, to other nodes in the path instructions to tear down the path.

17. (Canceled)

18. (Currently Amended): A method for deallocating resources in a network of connected nodes, the method comprising:

discovering neighbors of each node in the network of connected nodes and link status with a signaling and routing protocol;

distributing routing topology information and optimal route determination with the signaling and routing protocol;

detecting a failure in a path in the network using the signaling and routing protocol;

determining if the path includes a permanent sub-network connection responsive to the routing topology information, and, if so, for each permanent sub-network connection:

initiating a predetermined time out period in response to detection of the failure;

determining if the predetermined time out period has expired since detection of the failure;

if the time out period has expired, determining if the failure has been corrected; and

if the failure has not been corrected, deallocating resources associated with the permanent sub-network connection;

~~wherein the network of connected nodes are arranged in a mesh structure in which each node is connected to one or more other nodes; and~~

wherein the permanent sub-network connection comprises a permanent grouping of one or more SONET/SDH paths that pass through a node in the network which is set up and torn down with [a] the signaling and routing protocol.

19. (Currently Amended): A method for deallocating resources in a network of connected nodes, the method comprising:

discovering neighbors of each node in the network of connected nodes and link status with a signaling and routing protocol;

distributing routing topology information and optimal route determination with the signaling and routing protocol;

detecting a failure in a path in the network using the signaling and routing protocol;

immediately clearing resources for all sub-network connections traversing the path using the signaling and routing protocol; and

in response to detecting the failure, waiting a predetermined time out period prior to clearing all resources for each permanent sub-network connection traversing the path;

~~wherein the network of connected nodes are arranged in a mesh structure in which each node is connected to one or more other nodes; and~~

wherein the permanent sub-network connection comprises a permanent grouping of one or more SONET/SDH paths that pass through a node in the network which is set up and torn down with [a] the signaling and routing protocol.